

METHOD FOR FORMING SILICIDE FILM OF A SEMICONDUCTOR DEVICE

ABSTRACT OF THE DISCLOSURE

A conductive pattern having a surface including silicon is formed on a substrate of a semiconductor device and a conduction region having a surface including silicon is formed in the substrate. A radio frequency etching process is performed ex-situ to remove impurities from a resultant structure and to improve surface characteristics of the conduction region. Residues generated during the radio frequency etching process are removed from the conductive pattern and the conduction region by a cleaning process. A metal film is formed on the conductive pattern and the conduction region. A silicide film is formed on the conductive pattern and the conduction region by reacting metal of the metal film and silicon in the conductive pattern and the conduction region. With a radio frequency sputtering process and a wet cleaning process, a metal silicide film having a uniform phase may be stably formed.